

Conference Abstract

Implications of Climate Change to Niche Patterns of Rothschild's Giraffe in Africa

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Abstract

The distribution of species is strongly influenced by habitat quality and its changes over time. Climate change has been identified as one of the major drivers of habitat loss, threatening the survival of many range-restricted animal species. Identification of spatiotemporal hotspots of species occurrence is important for understanding basic ecological processes particularly for the conservation of species at risk. This study models the spatiotemporal distribution of Rothschild's giraffe (*Giraffa camelopardalis rothschildi*) with the view of explaining the possible effects of changing habitat suitability in Kenya and across Africa. The study analyzes the relative importance of different climatic variables and establishes the variables that are the strongest predictors of the species' geographic range. We apply species distribution modelling to predict the species' response to future climate and land use change scenarios. Our model is based on occurrence data from the Global Biodiversity Information Facility ([GBIF](https://www.gbif.org/)) for the period 1923-2019 and climatic data from the [WorldClim](https://worldclim.org/). We fit the model using the Maximum Entropy (Maxent) algorithm to identify the combination of environmental responses, which best predicts evolving hotspots of occurrence for this species and future habitat suitability in face of climate change. The study demonstrates the usability of occurrence data over time on Rothschild's giraffe and gives insights on the integration of land use variables to be able to link species distribution patterns, land use change and climate change to effectively inform conservation management.

Keywords

Giraffa camelopardalis rothschildi, species distribution modelling, climate change, geographic range

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Conflicts of interest

None